USDA
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Natural Resources Conservation Service

Native Warm Season Grasses Establishment Job Sheet

Description

Warm season grasses are a group of grasses which reach their maximum productivity during summer. Growth for warm season grasses begins when soil temperature reaches approximately 55 degrees Fahrenheit. The growth rate increases with the temperature to a maximum of about 90 degrees F. At one time native warm season grasses were common across the state, but have been largely replaced with introduced cool season grasses.

Benefits

Research has shown that a greater diversity of wildlife species can be produced with native warm season grasses than with cool-season grasses and legumes. Native warm season grasses benefit wildlife because they are bunchgrasses. They grow upright with bare ground in between. This provides overhead cover for protection, quality nesting, open travel and facilitates food attracting insects.

Recommended Varieties

Switchgrass: Shelter, Cave-in-rock, Blackwell, Kanlow (wet soils), Alamo (wet soils)
Indiangrass: Rumsey, Osage, Cheyenne
Big Bluestem: Rountree, Kaw, Niagara
Little Bluestem: Aldous, Cimarron, Pastura
Side oats grama: El Reno, Haskell, Niner
Eastern gama: Iuka, Pete (PMK-24)

Planting Rate

A rate of 4-6 lbs/acre (pure live seed) of native warm season grasses is sufficient in establishing a stand for conservation purposes (erosion control, wildlife). This is about 1/2 the seeding rate used to establish livestock forage. A minimum of three or more species plus legumes and forbs should be used in wildlife plantings.

Planting Time

Early April to June are the preferred planting months for native warm season grasses.

Soil Fertility

Soil test the field. Soil sampling should be done several weeks or months prior to planting time. In the absence of a soil test, verify soil's pH range using a county soil survey. Soil pH should range from 5.5 to 8.4 at planting. At planting, fertilize with phosphorus and potassium to the minimum rate as per soil test. ***When planting do not add nitrogen.*** Nitrogen will stimulate weed competition.

Seedbed Preparation

In conventional plantings establish a tilled, firm seedbed by plowing and disking. A cultipacker should be used before and after seeding to firm the bed. The importance of a firm level seedbed cannot be over-emphasized.

Broadcasting

Broadcast fluffy seed (bluestems, Indiangrass, sideoats grama) with a drop spreader or cyclone spreader and then cultipack or drag to lightly cover seed. Do not attempt to cover all seed. When using a cyclone spreader, try mixing seed with various carriers at a ratio of 2 seed units:1 carrier unit. Suggested carriers: pelleted lime, cracked corn, wheat, and or phosphorous and potassium fertilizer.

Drilling and No-Till Planting

Smooth seeds such as switchgrass can be planted using a conventional drill with the alfalfa box set to place the seed 1/4 inch deep. Debearded fluffy seeded species can also be planted with a conventional drill; however, the debearding process will add to the seed cost. Eastern gamagrass seed can be planted with a corn planter.

The seeding of fluffy seeded species will need to be drilled with a no-till drill specialized to plant these seeds. These drills have grass seed boxes with dividers and agitators, picker wheel, and oversized drop tubes. Conventional drill equipment is not designed to accurately plant stands of the fluffy native grasses.

Seed placement in any drilling is critical. Planting too deep is a common cause of stand failure. Optimum depth is 1/4 inch deep, and seed planted deeper than 1/2 inch are not likely to germinate. When drilling,up to 1/3 of the seed may be left of top of the ground as long as the press wheels are ensuring good seed-to-soil contact .

No-till planting is the preferred method since soil disturbance is lessened, thus reducing weed competition and soil erosion. Tennessee Wildlife Resources agency has several no-till drills available to establish native warm season grasses. The drills are usually operated at 4-5 mph, which is slower than row crop drilling.

Native warm season grasses may be no-till planted into fields containing corn, milo or soybean crop residue. Some of the most successful no-till plantings have been established in soybean residue, possibly due to residue herbicides that continue to control weeds. All existing vegetation must be eradicated prior to no-till planting into fescue fields. Refer to "Fescue Eradication Job Sheet" for no-till planting into fescue.

Successful Establishment

Warm season grasses thrive in direct sunlight. During the first summer of establishment, as weeds reach a height of 18 inches, stands should be mowed to a height of 8-10 inches. Do not mow warm season grass stands below a height of 8 inches at any time. Be patient. One to three plants per square foot by the end of the first growing season is considered successful. Allow at least two growing seasons for the stand to become fully established. Some seeds will not germinate the first year.

Smooth seed flows well through seed drill even when mixed with legumes like partridge pea or hairy vetch. To break seed dormancy, it is recommended 1-2 year seed or seed treated by methods such as "wet chill". Check with seed supplier to verify if necessary seed treatment to scarify and break dormancy has been conducted.

References

- Tennessee Wildlife Resource Agency (TWRA). October 1997. *Native Warm Season Grasses for the Conservation Reserve Program.*
- Capel, Stephen. 1995. *Native Warm Season Grasses for Virginia and North Carolina Benefits for Livestock and Wildlife.* Virginia Department of Game and Inland Fisheries.
- Soil Conservation Society of America. *Warm-season Grasses: Balancing forage programs in the Northeast and Southern Cattle Belt.*